

at least one removal line introduced into the padding for removing said active substance, said removal line connectable to a vacuum source,

wherein said supply line (22; 22.1; 22.2) is provided with a controllable closure mechanism (32; 38; 40; 44; 46; 48; 50), said removal line (26) is provided with a controllable closure mechanism (34; 38; 42; 44; 46; 48; 52) and a controller (36) is provided which temporally controls these closure mechanisms (32; 34; 38; 40; 40; 42; 44; 46; 48; 50; 52) so that the closure mechanism (32; 34; 38; 40; 40; 42; 44; 46; 48; 50; 52) of the supply line (22; 22.1; 22.2) and the closure mechanism (34; 38; 40; 42; 44; 46; 48; 52) of the removal line (26) are not open at the same time and that in the time interval between the closure of the closure mechanism (32; 34; 38; 40; 42; 44; 46; 48; 50; 52) of the supply line (22; 22.1; 22.2) and the opening of the closure mechanism (34; 38; 40; 40; 42; 44; 46; 48; 50; 52) of the removal line (26) a treatment dwell time interval (T_2) is provided.

22. A device according to Claim 21, wherein said padding (12) is comprised of an elastic compressible porous material.

23. A device according to Claim 22, wherein said padding (12) is comprised of an open pored PVA-foam material.

24. A device according to Claim 21, wherein the sealing cover is a flexible foil (14), which is air tight yet permeable to water vapor.

25. A device according to Claim 21, wherein said supply line (22; 22.1; 22.2) and said removal line (26) are introduced into the padding (12) via a common drainage hose (16).

26. A device according to Claim 21, wherein said supply line (22; 22.1; 22.2) and said removal line (26) are respectively introduced into the padding (12) via separate drainage hoses (16, 18).

27. A device according to Claim 21, further comprising a controller (36) for controlling the timing of the opening process of the closure mechanism (32; 34; 38; 40; 42; 44; 46; 48; 50; 52) of the supply line (22; 22.1; 22.2).

28. A device according to Claim 21, further comprising a controller (36) for controlling the opening process of the closure mechanisms (34; 38; 40; 42; 44; 46; 48; 50; 52) of the removal line (26).

29. A device according to Claim 21, wherein said controller (36), after the suctioning period (T_3), determines a vacuum time interval (T_4) in which a predetermined vacuum is maintained in the padding (12).

30. A device according to Claim 21, further comprising a pressure sensor (38) adapted to be introduced under the sealingly engagable cover (14), and operably connected with said controller (36).

31. A device according to Claim 21, wherein the closure mechanisms (32, 34) are electromagnetic, pneumatic or hydraulic operated hose clamps.

32. A device according to Claim 31, wherein at least one of said supply line (22) and removal line (34) are constructed as a hose, wherein said hose clamps (32, 34) have a receptacle for receiving said supply line (22) or removal line (26), and wherein said hose clamps (32, 34) have a piston responsive to said controller and adapted for squeezing said hose against a hose clamp sidewall.

33. A device according Claim 21, wherein said closure mechanisms are multi-way valves (38; 40; 42; 44; 46; 48; 50; 52).

34. A device according to Claim 33, wherein said multi-way valves (38; 40; 42; 44; 46; 48; 50; 52) are operable via a step motor controlled by said controller (36).

35. A device according to Claim 21, wherein said controller (36) is a programmable electronic controller.

36. A process for application of active substances to a wound surface of a wound having a rim, said process comprising:

applying a padding of a porous material upon the wound surface;

providing a cover over the wound surface and the padding, and sealingly securing said cover onto the skin surface about the rim of the wound;

introducing at least one fluid active substance via at least one supply line into the padding; and

removing said at least one fluid active substance by suctioning out of the padding,

wherein the introducing and the suctioning out of the active substance is timely controlling in such a manner, that the introduction and the suctioning off are conducted in separate, not overlapping time intervals (respectively T_1 and T_3) and that a dwell time interval (T_2) is provided between the introduction of and the suctioning off of the active substance.

37. A process according to Claim 36, wherein subsequent to the suctioning off (T_3) of the active substance and before the next introduction (T_1) a vacuum time interval (T_4) is provided, in which a vacuum is maintained under said cover.

38. A process according to Claim 36, wherein the introduction of the active substance occurs under a temporally controlled slow increase of the volumetric flow of the active substance.

39. A process according to Claim 36, wherein at the beginning of the introduction of the active substance a predetermined volume of the active substance is introduced under sufficient pressure to cause said active substance to rinse through the porous padding.